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ICE-WORTHY RESEARCH SHIPS OF THE WORLD
Including Icebreakers (IB) of Limited Scientific Capability and Availability

	Year Built	Name	Length (loa, feet)	Displacement (tons)	SHP	Remarks
Argentina	1952	<i>General San Martin</i>	280			IB
	1979	<i>Almirante Irizar</i>	386	12,000	16,200	IB
	1979	<i>Puerto Deseado</i>	250			R
Brazil	1957	<i>Barao de Teffi</i>	247			Formerly <i>Thala Dan</i>
Canada	1954	<i>Labrador</i>	269	5,300		IB
	1956	<i>Baffin</i>	285	4,200		R
	1960	<i>John A. MacDonald</i>	290	9,000	15,000	IB
	1963	<i>Narwhal</i>	251	2,220		S
	1963	<i>Hudson</i>	296	4,660		R
	1965	<i>Endeavour</i>	207			R
	1967	<i>Dawson</i>	196			R
	1968	<i>Louis St. Laurent</i>	345		24,000	IB
	1971	<i>Carino</i>	145			Charter (Carino Co., Ltd.).
	1976	<i>Polarsirkel</i>	162		2,500	Charter (Carino Co., Ltd.).
Denmark	1978	<i>Pierre Radisson</i>	320	8,300		IB "R" Class
	1979	<i>Franklin</i>	320	8,300		IB "R" Class
	1983	<i>Polar Queen</i>	214		5,500	Charter (Carino Co., Ltd.).
	1961	<i>Nella Dan</i>	247			Charter (J. Lauritzen Lines)
	1982	<i>Dana</i>				R Also 5 icebreakers.
Federal Republic of Germany	1955	<i>Anton Dohrn</i>	205			R Also 4 icebreakers.
	1973	<i>Explora</i>	234		3,500	R
	1982	<i>Polarstern</i>	332		16,500	R

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Dr. Z. H. H. H.
Gitt
Oct 13/23

ICE-WORTHY RESEARCH SHIPS OF THE WORLD
(Continued)

	Year Built	Name	Length (loa, feet)	Displacement (tons)	SHP	Remarks
Finland	1953	<i>Aranda</i>	173			R Refurbished in 1976.
	1954	<i>Voima</i>	274	5,210	13,930	IB Rebuilt in 1979.
	1958	<i>Karhu</i>	243	3,540	7,500	IB
	1959	<i>Murtaja</i>	243	3,540	7,500	IB
	1960	<i>Sampo</i>	243	3,540	7,500	IB
	1963	<i>Tarmo</i>	277	4,890	12,000	IB
	1968	<i>Vamma</i>	277	4,890	12,000	IB
	1970	<i>Apu</i>	284	4,890	12,000	IB
	1975	<i>Urho</i>	344	9,660	22,000	IB
	1976	<i>Sisu</i>	344	9,660	22,000	IB
France	1961	<i>Jean Charcot</i>	246	2,100	3,300	Antarctic supply and research.
	1969	<i>Cyros</i>	160	800		
	1972	<i>Marion-Dufresne</i>	365			
Japan	1965	<i>Fuji</i>	325	9,000	12,000	RIB
	1982	<i>Shirase</i>	403	17,600	30,000	RIB
Norway	1958	<i>Johan Hjort</i>	172			F
	1960	<i>H.U. Sverdrup</i>	127			F
	1951/77	<i>Polaris</i>	175			Charter (G. C. Rieber & Co.)
	1968	<i>Kvitbjørn</i>	135			Charter (G. C. Rieber & Co.)
	1970	<i>Kvitungen</i>	135			Charter (G. C. Rieber & Co.)
	1975	<i>Polarbjørn</i>	162		2,500	Charter (G. C. Rieber & Co.)
	1981	<i>Lance</i>	198	2,175	3,200	R Norwegian Polar Institute

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ICE-WORTHY RESEARCH SHIPS OF THE WORLD
(Continued)

	Year Built	Name	Length (loa, feet)	Displacement (tons)	SHP	Remarks
Sweden	1957	<i>Oden</i>	274	4,440	10,500	IB
	1964	<i>Tor</i>	277	4,890	12,000	IB
	1969	<i>Njord</i>	284	4,890	12,000	IB
	1974	<i>Atle</i>	344	9,660	22,000	IB
	1975	<i>Frej</i>	344	9,660	22,000	IB
	1979	<i>Ymer</i>	344	9,660	22,000	IB Arctic research 1980
Union of S. Africa	1961	RSA	223			S
	1978	<i>Agulhas</i>	354		6,000	Antarctic supply and research
United Kingdom	1952	<i>Benjamin Bourring</i>	213	1,300	1,200	Formerly <i>Kista Dan</i>
	1955	<i>Explorer</i>	202			
	1956	<i>John Biscoe</i>	220		1,350	Formerly <i>Anita Dan</i>
	1956	<i>Endurance</i>				
	1962	<i>Discovery</i>	260			
	1970	<i>Bransfield</i>	325	4,800	5,000	Antarctic supply and research
USA	1943	<i>Westwind</i>	269	5,300	10,000	IB
	1945	<i>Northwind</i>	269	5,300	10,000	IB
	1954	<i>Glacier</i>	309	8,700	16,900	IB
	1968	<i>Hero</i>	125	640	760	NSF antarctic wooden trawler- research vessel.
	1975	<i>Polar Star</i>	399	12,000	{18,000-	IB
	1977	<i>Polar Sea</i>	399	12,000	{60,000	IB

ICE-WORTHY RESEARCH SHIPS OF THE WORLD
(Continued)

Year Built	Name	Length (loa, feet)	Displacement (tons)	SHP	Remarks
USSR					
1952	Polyarnik	126			R
1954	Ob	426			R
1956	Pervenets	128			R
1956	Okeanograf	128			R
1956	Aysberg	225			R
1957	Mikhail Lomonosov	335			R
1958	Shtorm	132			S
1964	Akademik Knipovich	280			F
1966	Professor Vise	408	6,900		R
1966	Petr Pakhtusov	221			S
1967	Akademik Shirshov	407			R
1967	Professor Zubov	408	6,900		R
1969	Priliv	319			R
1970	Dimitriy Laptev	224			S
1970	Dimitry Ovtsyn	219			S
1971	Stepan Malygin	217			S
1971	Dimitry Sterlegov	224			S
1972	Nikolay Kolomeytsev	224			S
1972	Valerian Al'Banov	224			S
1972	Edward Toll'	224			S
1973	Vladimir Sukhotskiy	224			S
1974	Nikolay Yevgenov	224			S
1974	Serey Dravkov	224			S
1975	Mikhail Somov	437	13,000		S
1975	Vsevolod Bereskin	180			R, AARI
1976	Professor Bogorov	226	1,654	2,000	R
1976	Professor Kuventsov	226	1,654	2,000	R
1976	Professor Vodjantskij	226	1,654	2,000	R
1976	Fedor Matisen	226	1,654	2,000	S
1977	Georgiy Maksimov	226	1,654	2,000	S

ICE-WORTHY RESEARCH SHIPS OF THE WORLD
(Continued)

	Year Built	Name	Length (loa, feet)	Displacement (tons)	SHP	Remarks
USSR (cont'd)	1977	Ivan Kiveev	226	1,654	2,000	S
	1977	Pavel Bashmakov	226	1,654	2,000	S
	1977	Yakov Smirnit'skiy	226	1,654	2,000	S
	1978	Otto Schmidt		3,650	5,400	R, AARI
	1978	Rudol'f Samoylovich				R, AARI
	1979	Professor Shtokman	226	1,654	5,000	S
	1980	Adademic Mstislav	401	5,500	5,800	R
	1982	Akademic Shokal'skiy	235	2,050	3,100	R
	-	Akademic Shuleykin	235	2,050	3,100	R, UC
	-	Professor Mul'tanovskiy	235	2,050	3,100	R, UC
	-	Professor Khromov	235	2,050	3,100	R, UC
	-	Professor Molehanov	235	2,050	3,100	R, UC
	<div> <div>UC in Finland, for assignment to AARI, Far East and Murmansk</div> </div>					
	<div> <div>Details lacking:</div> <div> Mayak Stvor Matisen Sedov Keldysh Shenkursk Professor Kurentsov </div> </div>					
						S S S S ? ? (heads 9 geophysical ship flotilla)

ICE-WORTHY RESEARCH SHIPS OF THE WORLD
(Continued)

Year Built	Name	Length (loa, feet)	Displacement (tons)	SHP	Remarks
USSR (cont'd)					
Icebreakers:					
1954	<i>Kapitan Belousov</i>	273	3,375	10,500	
1956	<i>Kapitan Voronin</i>	273	4,375	10,500	
1956	<i>Kapitan Melekhov</i>	273	4,375	10,500	
1959	<i>Lenin</i>	440	16,000	44,000	N
1960	<i>Moskva</i>	401	12,840	22,000	
1961	<i>Leningrad</i>	401	12,840	22,000	
1965	<i>Kiev</i>	401	12,840	22,000	
1968	<i>Murmansk</i>	401	12,840	22,000	
1969	<i>Vladivostok</i>	401	12,840	22,000	
1974	<i>Yermak</i>	442	20,240	36,000	
1975	<i>Arktika</i>	492	23,400	75,000	N, August, 1977, voyage to North Pole.
1975	<i>Admiral Makarov</i>	442	20,240	36,000	
1976	<i>Kapitan Kosolapov</i>	185	2,045	3,400	
1976	<i>Kapitan M. Izmaylev</i>	185	2,045	3,400	
1977	<i>Sibir</i>	492	23,400	75,000	N
1977	<i>Kapitan Sorokin</i>	434	14,900	22,000	
1978	<i>Kapitan Nikolayev</i>	434	14,900	22,000	
1980	<i>Kapitan Dranitsyn</i>	434	14,900	22,000	
1981	<i>Kapitan Khlebnikov</i>	434	14,900	22,000	
1982	<i>Mud'yuga</i>	290		12,400	
-	<i>Rossiya</i>			75,000	N, UC
-	<i>Dikson</i>			10,000	UC
-	<i>Magadan</i>			10,000	UC

ABBREVIATIONS:

R - Dedicated research vessel
F - Fisheries research
S - Survey vessel
IB - Icebreaker, limited scientific capability or availability
AARI - Arctic and Antarctic Research Institute, Leningrad
SHP - Shaft horse power
N - Nuclear powered
UC - Under construction

NOTES:

Eltanin, built in 1957, loaned to Argentina 1974-1979 (Islas Orcadas), returned to U.S., not in service. Some U. S. ships, such as R/V *Alpha Helix*, have modest ice-strengthening insufficient for sustained, unaided operations in sea ice.

Poland has modern ice-worthy trawlers and at least one research vessel which have been used in exploratory Antarctica krill investigations.

USSR information incomplete, many modern ice-worthy trawlers and cargo vessels in national fleet, *Zveroboi* class stern trawlers (237 feet, 3300 SHP) used occasionally for marine mammal-fisheries research in sea ice. Several icebreakers built in Finland. Extensive operations on Northern Sea Route, including year-round activity in the Kara Sea.

German designers have developed a new approach to icebreaking technology, the Thyssen/Waas System. Model testing and full-scale trials with the converted icebreaker, *Max Waldeck*, show favorable prospects for this technology.

The Wärtsilä shipyard in Finland is the primary supplier of icebreakers to the world, having built at least one-half of all existing tonnage in this category.

Dome Petroleum Ltd., Canada, has two experimental icebreakers operating in the Beaufort Sea, *Kigoriak* (1979) and *Robert Lemeur* (1982).

Australia is planning a research ship specifically for antarctic work.

Peoples Republic of China plans to build a 280 foot, ice-strengthened research vessel.

SOURCES:

The Motor Ship
Oceanographic Vessels of the World
Polar Operations, MacDonald, 1969
Polar Record
Polar Times
Ship and Boat International
Jane's Ocean Technology
National Science Foundation
AARI, Leningrad
Wärtsilä AB, Finland
G. C. Rieber Co., Norway
Carino Co., Ltd., Canada
J. Lauritzen Lines, Denmark
German and Milne, Montreal
Dr. T. Armstrong, Scott Polar Research Institute

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